

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as indicated.

- 1 1. (Original) A method for automated management of hydrocarbon gathering, the  
2 method comprising:  
3 collecting data from a plurality of automated measurement and control devices  
4 positioned in a hydrocarbon gathering system;  
5 comparing the collected data with data stored in a database; and  
6 using the data comparison to automatically schedule a test of at least one of the  
7 plurality of automated measurement and control devices.  
8
- 1 2. (Original) The method of claim 1, wherein the data stored in the database is  
2 automatically updated with the collected data.  
3
- 1 3. (Original) The method of claim 1, wherein the stored data comprises contractual  
2 provisions contained in contracts between a hydrocarbon gathering company and  
3 another entity.  
4
- 1 4. (Original) The method of claim 3, wherein the contractual provisions comprise a  
2 testing frequency for the automated measurement and control devices.  
3
- 1 5. (currently amended) The method of claim 1, wherein the ~~management~~ collected data  
2 comprises test scheduling data defined by a hydrocarbon gathering company.

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1 6. (Original) The method of claim 1, wherein the plurality of measurement and control  
2 devices comprises electronic flow meters.

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1 7. (Original) The method of claim 1, wherein the plurality of automated measurement  
2 and control devices comprises programmable logic controllers.

3

1 8. (Original) The method of claim 1, wherein the plurality of automated measurement  
2 and control devices comprises remote terminal unit.

3

1 9. (Original) The method of claim 1, wherein the plurality of automated measurement  
2 and control devices comprises automated gas composition analysis devices.

3

1 10. (Original) The method of claim 1, wherein using the data comparison further  
2 comprises:  
3 notifying a field technician of a required test for at least one of the plurality of  
4 automated measurement and control devices; and  
5 automatically notifying a witness of the test after the field technician has selected  
6 a test date.

7

1 11. (previously presented) A method for automated management of hydrocarbon  
2 gathering, the method comprising:  
3 collecting data from a plurality of automated measurement and control devices

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4 positioned in a hydrocarbon gathering system;  
5 comparing the collected data with data stored in a database;  
6 using the data comparison to automatically schedule a test of at least one of the  
7 plurality of automated measurement and control devices;  
8 analyzing the collected data to determine a volume of a flow of hydrocarbons  
9 through at least one of the plurality of automated measurement and control  
10 devices;  
11 comparing the volume of the hydrocarbon flow to contractual provisions stored in  
12 the database; and  
13 automatically scheduling meter tests according to the stored contractual  
14 provisions.

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1 12. (previously presented) The method of claim 11, further comprising:  
2 automatically updating the database after testing of at least one of the plurality of  
3 automated measurement and control devices.

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1 13. (Original) The method of claim 11, wherein selected field personnel are  
2 automatically notified of the automatically scheduled tests.

3

1 14. (Original) The method of claim 13, wherein the automatic notification is transmitted  
2 electronically.

3

1 15. (Original) The method of claim 11, wherein a witness is automatically notified of the  
2 automatically scheduled tests.

1 16. (Original) The method of claim 15, wherein the automatic notification is transmitted  
2 electronically.

1 17. (previously presented) The method of claim 11, further comprising:  
2 testing at least one of the plurality of automated measurement and control devices;  
3 automatically comparing test data with master testing data stored in the database;  
4 and  
5 generating an alarm if a variance between the new testing data and the master  
6 testing data exceeds a selected threshold.

1 18. (previously presented) The method of claim 11, further comprising:  
2 automatically measuring electrical current flow in at least one cathodic protection  
3 system positioned in the hydrocarbon gathering system; and  
4 generating an alarm if the automatically measured electrical current flow exceeds  
5 a selected threshold.

1 19. (previously presented) The method of claim 11, wherein a computer system  
2 connected to the database automatically generates an alarm when a selected event  
3 is detected.

1 20. (Original) The method of claim 19, wherein the selected event comprises detection of  
2 non-conforming test data collected from at least one of the plurality of automated  
3 measurement and control devices.  
4

1 21. (Original) The method of claim 19, wherein the selected event comprises detection of  
2 a failure of at least one of the plurality of automated measurement and control  
3 devices.  
4

1 22. (Original) The method of claim 19, wherein the selected event comprises detection of  
2 a system imbalance beyond a selected threshold.  
3

1 23. (Original) The method of claim 19, wherein the selected event comprises detection of  
2 a change in natural gas composition beyond a selected threshold.  
3

1 24. (currently amended)A method for automated management of a hydrocarbon gathering  
2 system, the method comprising:  
3 collecting well test data from at least one of a plurality of producing wells in a  
4 hydrocarbon gathering system;  
5 using the well test data to automatically reallocate ~~hydrocarbon production~~ a  
6 ~~volume~~ cost of produced hydrocarbons to at least one of the plurality of producing  
7 wells.  
8

1 25. (currently amended)The method of claim 24, wherein the well test data is used to  
2 automatically reallocate ~~production costs~~ hydrocarbon production to at least one  
3 of the plurality of producing wells.  
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1 26. (Original) The method of claim 24, wherein the well test data is used to  
2 automatically populate regulatory forms.  
3

1 27. (Original) The method of claim 24, wherein the well test data is automatically  
2 reported to selected users.  
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1 28. (currently amended)A method for automated management of a hydrocarbon gathering  
2 system, the method comprising:  
3 calculating a system balance for a selected balance envelope, said system balance  
4 relating to at least one of: (i) balancing a volume of produced hydrocarbons  
5 entering and leaving an element of the hydrocarbon gathering system, (ii)  
6 balancing of a heating value of produced hydrocarbons entering and leaving a  
7 component of a hydrocarbon gathering system, and, (iii) balancing of a natural  
8 gas component ~~balance~~ of produced hydrocarbons entering and leaving a  
9 component of a hydrocarbon gathering system;  
10 collecting hydrocarbon sample test data from at least one of a plurality of  
11 automated measurement and control devices positioned in a hydrocarbon  
12 gathering system; and

13 using the hydrocarbon sample test data to automatically recalculate the system  
14 balance.

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1 29. (Original) The method of claim 28, further comprising:

2 using the recalculated system balance to mix hydrocarbon products from at least  
3 two gathering pipelines to produce a desired hydrocarbon flow composition.

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1 30. (Original) The method of claim 29, wherein the desired hydrocarbon flow  
2 composition is selected to minimize hydrocarbon processing costs.

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1 31. (Original) The method of claim 28, wherein the plurality of measurement and control  
2 devices comprises electronic flow meters.

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1 32. (Original) The method of claim 28, wherein the plurality of automated measurement  
2 and control devices comprises programmable logic controllers.

3

1 33. (Original) The method of claim 28, wherein the plurality of automated measurement  
2 and control devices comprises remote terminal units.

3

1 34. (Original) The method of claim 28, wherein the plurality of automated measurement  
2 and control devices comprises automated gas composition analysis devices.

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1 35. (Original) The method of claim 28, wherein a database is automatically updated after  
2 recalculation of the system balance.

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1 36. Canceled

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1 37. Canceled.

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1 38. (Original) The method of claim 28, wherein the system balance comprises a natural  
2 gas component balance.

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1 39. (Original) The method of claim 28, wherein the balance envelope comprises a  
2 combination of user defined selected ones of the plurality of automated  
3 measurement and control devices.

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1 40. (currently amended)A method for automated management of a hydrocarbon  
2 gathering system, the method comprising:  
3 calculating a system balance for a selected balance envelope, said system balance  
4 relating to at least one of: (i) balancing a volume of produced hydrocarbons  
5 entering and leaving a component of the hydrocarbon gathering system, (ii)  
6 balancing a heating value of produced hydrocarbons entering and leaving a  
7 component of the hydrocarbon gathering system, and, (iii) balancing a natural gas  
8 component balance of produced hydrocarbons entering and leaving a component  
9 of the hydrocarbon gathering system;

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10 testing at least one of a plurality of automated measurement and control devices  
11 positioned in a hydrocarbon gathering system; and  
12 using the test data to automatically recalculate the system balance.  
13

1 41. (Original) The method of claim 40, wherein the plurality of measurement and control  
2 devices comprises electronic flow meters.  
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1 42. (Original) The method of claim 40, wherein the plurality of automated measurement  
2 and control devices comprises programmable logic controllers.  
3

1 43. (Original) The method of claim 40, wherein the plurality of automated measurement  
2 and control devices comprises remote terminal units.  
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1 44. (Original) The method of claim 40, wherein the plurality of automated measurement  
2 and control devices comprises automated gas composition analysis devices.  
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1 45. (currently amended)A method for automated management of a hydrocarbon gathering  
2 system, the method comprising:  
3 calculating a composition of a flow of produced hydrocarbons in a hydrocarbon  
4 gathering system;  
5 collecting hydrocarbon sample test data from a plurality of automated  
6 measurement and control devices positioned in the hydrocarbon gathering system;  
7 and

8 using the hydrocarbon sample test data to automatically recalculate the  
9 composition of hydrocarbon flow in the hydrocarbon gathering system.  
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1 46. (Original) The method of claim 45, wherein the plurality of measurement and control  
2 devices comprises electronic flow meters.  
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1 47. (Original) The method of claim 45, wherein the plurality of automated measurement  
2 and control devices comprises programmable logic controllers.  
3

1 48. (Original) The method of claim 45, wherein the plurality of automated measurement  
2 and control devices comprises remote terminal units.  
3

1 49. (Original) The method of claim 45, wherein the plurality of automated measurement  
2 and control devices comprises automated gas composition analysis devices.  
3

1 50. (Original) The method of claim 45, further comprising:  
2 automatically updating a database after recalculation of the hydrocarbon flow  
3 composition.  
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1 51. (Original) The method of claim 1, wherein the collected data and data stored in the  
2 database are used to model pipeline hydraulics.  
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1 52. (Original) The method of claim 1, further comprising:

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2 using the collected data and data stored in the database to automatically generate a  
3 report for a selected unit of a hydrocarbon gathering system.

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1 53. (Original) The method of claim 1, wherein the collected data and data stored in the  
2 database are used to evaluate reservoir production.